

## Accion Fraterna's work in water management

Accion Fraterna's is a Voluntary Organisation founded by Father Vincent Ferrer in 1982, focused on supporting development in the poor, and drought-prone, district of Anantapur in southern Andhra Pradesh, India.

Our work includes activities to:

- Improve agricultural productivity, diversify production and reduce vulnerability to drought
- Strengthen human and organisational resources for development in the district
- Advocate and lobby for policy changes related to natural resources and rural development
- Answer research questions relating to agriculture, water and livelihoods

This brochure provides more information on one of our major water-related projects: Water, Households and Rural Livelihoods (WHiRL) being carried out in collaboration with partners from South Africa and Europe.



## Water, Households and Rural Livelihoods (WHiRL): protecting domestic water supplies

Although in key policies domestic water needs are nearly always given priority, in practice there are numerous problems in protecting water resources for domestic uses. The Water, Households and Rural Livelihoods (WHiRL) research project is supporting innovative approaches to promote better water management (Box 1) for rural water supply in two very different contexts. In India, research is addressing the major problems arising from competition between different users for scarce groundwater. Pumping of water for irrigation often compromises the amount and/ or quality of groundwater available for domestic supply in villages. For example, in Anantapur good quality groundwater is often used for agriculture in areas with severe fluoride pollution problems.

### Box1 Integrated Water Resources Management (IWRM)

The WHiRL project is about promoting IWRM – this embraces the integrated management of land and all aspects of the water cycle for the sustainable benefit of humans and the environment.

For more information on IWRM see: <http://www.gwpforum.org> and Working Paper 2 on the WHiRL website

In South Africa the project is working on how improved national policies can be operationalised to provide more secure access to water for domestic water supplies. This includes small-scale productive activities using domestic water like backyard irrigation and keeping livestock – comprising a largely invisible 'sector' - that are important to the livelihoods of the rural poor.

Watershed development projects in India (Box 2) offer a potential entry point to improve groundwater management and protect water supply needs. However, to date such projects have largely focused on promoting irrigation, have neglected drinking water issues and in some cases may have made water supplies worse.

The research work in India is focusing on four case study villages with different water supply problems in Kalyandurg, a

### Box 2 Watershed development

Watershed development has proved a very attractive and often successful approach to rural development in India. But few projects specifically target or address impacts on domestic water supplies. The focus, of aspects that relate to water, is usually on water harvesting to enhance irrigation. But increased irrigation water demand can sometimes reduce the availability for other uses including drinking, especially during droughts.

For further information see papers and reports that can be downloaded from the website including Working Paper 5 by BAIIF

relatively dry part of Anantapur in Andhra Pradesh. In Battuvani Palli for example, although there is relatively good water infrastructure, high fluoride levels are a very severe problem. The research team has been working to establish mechanisms to use the better quality water in the village for drinking and contaminated water for agriculture.



## Development of methodologies and tools

In the four pilot villages, methodologies and tools have been developed for tackling the challenges relating to the reliability of water supplies for domestic and productive uses. These methodologies draw on best practices from semi-arid areas of India and South Africa. They include simple procedures for assessing:

- the status of, and demand for, water at different scales,
- the constraints on water resource use (e.g. water quality problems, social exclusion), and
- the levels of competition between different users.

An important feature of these methodologies is that they use participatory approaches in conjunction with “specialist” analysis of secondary data, and additional data that can be collected rapidly with the involvement of villagers. For example, rapid surveys of fluoride levels in domestic water points and the number and capacity of water harvesting structures.



In conjunction with an intensive awareness campaign, the WHiRL methodologies have been used over a period of 9 months to identify the specific water-related challenges faced by social groups within each village. Subsequent discussions have used a combination of local knowledge, social and economic acceptability criteria, and information from the “specialist” analysis to match potential solutions to the challenges in each village.

In most cases these solutions involve a sequence of activities that puts as much, or even more emphasis, on the long-term sustainability of interventions and management capacity as on any technical works. Many of these activities have not previously been considered by watershed development projects. Discussions have also considered the risks and potential tradeoffs associated

with each intervention and how these can be minimised.

## Findings from pilots: Battuvani Pali

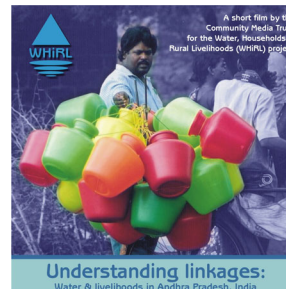
An example are the solutions found to the severe fluoride problems faced in Battuvani Pali (which has a water supply containing more than 4 ppm fluoride compared to a safe level of 1.5 ppm). With the community a number of possible solutions were identified. Some of these were later discarded during village-level discussions, such as developing a new domestic water source close to the neighbouring village. The preferred solution was to develop a new source on temple land near the village tank, and to improve and protect this source by improving tank inflows by putting gates in upstream structures that impede runoff. There would be agreed resolutions for management of these gates, and a ban on any new agricultural wells near to the temple land.

The first borewell drilled on the temple land was dry, but the second had a good yield. But it also had a high fluoride content. The decision of the village was then to revert to their second option. This was to develop resolutions and legally-binding agreements to connect the village water supply to an agricultural borewell (with good quality water) close to the tank, and for the current user of that source to be compensated. The new borewell on the temple land will be used for community horticulture. This solution also still involves improving the tank inflows as these, particularly during low rainfall/runoff years, are needed to ensure sufficient groundwater recharge and protect the new domestic water supply.

## Video

A short film ‘Understanding linkages: water and livelihoods in Andhra Pradesh, India’

has been made by rural women (from the Community Media Trust), and tells a story of huge change in water supply and use over recent



decades. The film in particular considers whether watershed development offers a solution to address the problems of groundwater overexploitation and failing drinking water sources. It includes interviews with many poor women, and other water users and stakeholders, on how their lives have been affected and what could be done to address these problems. For details on how to order copies of the film, see the WHiRL website.

## Research outputs

The WHiRL team produces papers, guidelines, and training and advocacy materials to improve integration of rural water supply issues within programmes incorporating IWRM principles. All our outputs are available through the WHiRL website: <http://www.nri.org/whirl>

## Collaborators

- Dr AJ James, India
- Andhra Pradesh Rural Livelihoods Project/ DWMA
- Association for Water and Rural Development (AWARD), South Africa
- Natural Resources Institute, UK
- IRC International Water and Sanitation Centre
- Water Resources Management Ltd, UK
- Stockholm Environment Institute, University of York, UK

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